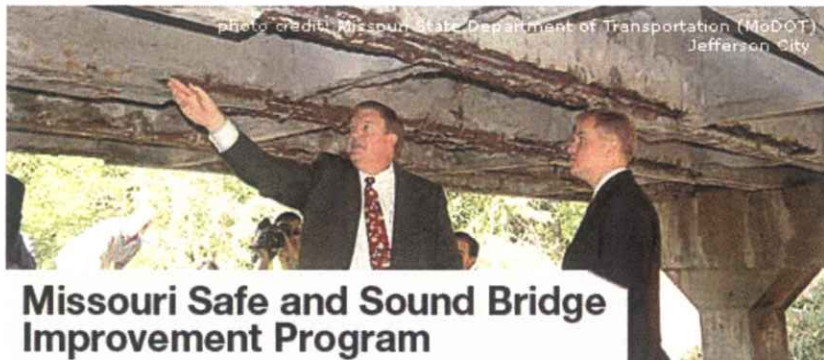




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## Case Studies



<b>Location</b>	State of Missouri
<b>Project Sponsor / Borrower</b>	Missouri State Department of Transportation (MoDOT) Jefferson City
<b>Program Areas</b>	 
<b>Mode</b>	Bridge
<b>Description</b>	<p>There are 10,249 bridges on the Missouri Department of Transportation (MoDOT) system with at least 1,093 in Condition 3 (serious) or Condition 4 (poor). The intention of the Missouri Safe and Sound Bridge Improvement Program is to replace or rehabilitate 802 bridges - currently in serious or poor condition - over a five-year period.</p> <p>Of the 802 bridges, 248 bridges have been selected by MoDOT for rehabilitation. These bridges are currently being put out to bid in groups based on location, type or repair work, or project size.</p> <p>The remaining 554 bridges are scheduled for replacement. MoDOT has grouped these individual projects into one single Design-Build contract. KTU Construction has been selected to complete the construction of these bridges by December 31, 2013.</p>
<b>Cost</b>	<p>Total Program Cost Estimate: \$700 million</p> <p>Bridges for reconstruction: \$487 million (KTU contract quoted price)</p>
<b>Funding Sources</b>	Indirect GARVEE bonds (Federal Reimbursement State Road Bonds)
<b>Project Delivery / Contract Method</b>	<p>Design-Bid-Build (Rehabilitation)</p> <p>Design-Build (Replacement)</p> <p>Design-Build Contractor: KTU Constructors team</p>
<b>Private Partner</b>	<p>Kiewit Western Company</p> <p>Traylor Bros., Inc.</p>

United Contractors, Inc.  
HNTB Corporation  
The LPA Group, Inc.

**Project Advisors /  
Consultants**

None

**Lenders**

Bondholders

**Duration / Status**

As of December 2009, the rehabilitation of 121 bridges has been completed. The design-build contract for the reconstruction is ongoing and the work is slated for completion by December 31, 2013. Electrical line relocation - Construction began in September 2008, slated for completion by the end of December 2009.

**Financial Status**

MoDOT sold indirect GARVEE bonds to pay for the program, with 23 annual payments of approximately \$44 million, which is about one-third of the Federal-aid bridge replacement funds it receives each year. These bonds are considered indirect GARVEE bonds because Missouri pledged all Federal-aid construction reimbursements when it issued its debt.

**Innovations**

The Program was originally envisioned as a Design-Build-Finance-Maintain project. However, the economic downturn in 2008 made such a procurement process less feasible and a different delivery method was devised. In September 2008, the Missouri Highway and Transportation Commission (MHTC) directed MoDOT to advance with the program in its current form, resulting in savings of more than \$500 million over the previous contract model.

The rehabilitation of the 248 bridges is also innovative as it is being contracted via a modified design-bid-build approach where bridges are grouped by location, size or type of improvement. This allows for expedition of the construction schedule.

**Related Links / Articles** [MoDOT Project Webpage](#)**Contacts**

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## Fact Sheet

- The program is improving 802 of MoDOT's most worn-out bridges in five years – by Dec. 31, 2013.
- The 802 bridges are divided into two groups. 248 were identified for rehabilitation (typically means a new deck on existing substructure). 554 are being completely replaced.
- An interactive map of Safe & Sound bridge projects is included on the MoDOT Web site. Color-coded icons indicate each bridge site and where it falls in the construction schedule. Pop-up windows give bridge and construction information, as well as suggested detour routes on state highways.

**Interested persons, though, should understand that the project start dates shown are targets, and likely will change as crews finish one bridge and move to the next. Check back often to view the latest projected schedules.**

- **KTU Constructors** was selected by the Missouri Highways and Transportation Commission to replace 554 bridges in a single design-build contract on May 21, 2009.
- Major members of the KTU Constructors team are:
  - Kiewit Western Company – Omaha, Neb.
  - Traylor Bros., Inc. – Evansville, Ind.
  - United Contractors, Inc. – Great Falls, S.C.
  - HNTB Corporation – Kansas City, Mo.
  - The LPA Group, Inc. – Columbia, S.C.
- Some key provisions of KTU's proposal:
  - Quoted price of \$487 million.
  - Committed to finish by Dec. 31, 2013 – 10 months earlier than required.
  - Average bridge closure for 493 bridges will be 45 days – nearly half of what a normal MoDOT bridge project would take.
  - MoDOT has the ability to move bridges within KTU's proposed construction schedule to respond to local events and issues. This has already been done more than 30 times to minimize inconvenience to drivers and local residents.
  - KTU is managing the project from a central office in Lee's Summit and regional offices around the state.
- KTU Constructors is utilizing Missouri-based subcontractors and materials suppliers to deliver the project. Safe & Sound will directly or indirectly support more than 5,300 jobs.
- The first Safe & Sound rehabilitation projects began in spring 2009 and the first replacement projects started that fall. By the end of 2010 330 bridges have been completed. Those bridges were built by 40 contractors, and a host of subcontractors, fabricators and materials suppliers.
- KTU has completed 156 new bridges through the end of 2010, and has more than 300 scheduled for construction in 2011.
- Under the design-build contract, KTU Constructors will recycle 9,000 tons of steel and 148,000 tons of concrete.
- Fastest bridges built so far by KTU Constructors:
 

■ Box Culvert	11 days
■ Single Span	23 days
■ Double Span	34 days



- Triple Span 28 days
- Four Span 33 day
- During a 103-day span in the summer/fall of 2010, 114 bridge projects were completed – 90 of those were total replacements.
- The 248 bridge rehabilitation projects are being contracted using a modified design-bid-build approach, where projects are grouped by type, size or location to accelerate construction schedules.

<u>CONSTRUCTION BY YEAR</u>	<u>MDBB</u>	<u>D-B</u>	<u>Overall</u>
2009	117	4	121
2010	57	152	209
Under construction	4	0	4
Remaining	70	398	468
<u>AVERAGE CLOSURE DURATIONS</u>	<u>MDBB</u>	<u>D-B</u>	<u>Overall</u>
	48.8 days	40 days	44.4 days

- Progress by MoDOT District through 2010:
  - District 1 – completed 53 of 155, 34 %
  - District 2 – completed 47 of 75, 63 %
  - District 3 – completed 16 of 79, 20 %
  - District 4 – completed 52 of 145, 36 %
  - District 5 – completed 55 of 90, 61 %
  - District 6 – completed 13 of 22, 59 %
  - District 7 – completed 27 of 73, 37 %
  - District 8 – completed 5 of 40, 13 %
  - District 9 – completed 13 of 36, 36 %
  - District 10 – completed 49 of 87, 56 %
  - **OVERALL – completed 330 of 802, 41**
- A 'progress meter' appears on the Safe & Sound Web site – [www.modot.org/safeandsound](http://www.modot.org/safeandsound) – that daily monitors how many bridges are under construction, how many have been completed, and how many are left to reach the 802-bridge target.
- A list of the bridges on the program, and maps of their locations, can be found on the project Web site – [www.modot.mo.gov/safeandsound](http://www.modot.mo.gov/safeandsound) There is at least one bridge in every Missouri county.
- Safe & Sound Milestones
  - #1 – Route AA over Hominy Creek in Polk County
  - #100 – Route E over Platte River in Platte County
  - #200 – Route JJ over Richland Creek in Morgan County
  - #300 – Route Z over Drainage Ditch #2 in Scott County
- Counties where Safe & Sound work has already been completed: Benton (2 bridges), Bollinger (2), Franklin (5), Grundy (2), Linn (2), Livingston (2), Mercer (1), Mississippi (7), Putnam (5), St. Francois (5).
- Counties with the most Safe & Sound bridges: Harrison/Henry (25), Stoddard (23), Lafayette/Pettis/Ray (22), Nodaway (21), Cass/Johnson (19), Saline (17).
- The total cost of the Safe & Sound program will approach \$700 million. MoDOT has sold GARVEE bonds ('Grant Anticipation Revenue Vehicles') to pay for the project, with 24 annual payments of approximately \$50 million. MoDOT will use roughly one-third of the Federal bridge replacement funds it receives each year to make those payments. The Safe & Sound program requires no additional funding.
- There are 10,249 bridges on the Missouri state highway system – 7th largest total nationwide.
- Approximately 1,100 of them are in poor/serious condition. The Safe & Sound Initiative will address most of these bridges.
- When the Safe & Sound program was first rolled out in 2006, it was envisioned as a Design-Build-Finance-Maintain

project. Ultimately, though, the nation's financial market meltdown in 2008 made the program unaffordable. In September 2008, the MHTC directed MoDOT to move forward with the program in its current form. That decision saved more than \$500 million over the cost of the previous contract model.

Contact us at [safeandsound@modot.mo.gov](mailto:safeandsound@modot.mo.gov)

Media desiring additional information, please contact: Bob Brendel at 573-751-8717